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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,507	08/26/2003	Susumu Saito	H05-3764/HO	2706

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EXAMINER

CURTIS, CRAIG

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,507

Applicant(s)

SAITO ET AL.

Examiner

Craig Curtis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/26/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (US 5,870,132 A).

With regard to claim 1, Inoue et al. disclose the invention as claimed (please refer to Fig. 1)—[a] multiple beam scanning device [53] for scanning a plurality of light beams [i.e., the plurality of beams emitted by the plurality of light emitting portions 21a] across a light receiving member [5], the multiple beam scanning device comprising: an array light source [21] including a plurality of a sub-array light sources [21a], each sub-array light source emitting a plurality of light beams with independently modulated light intensity [please see column 12, lines 3-5]; and an optical unit [4] that converges the light beams emitted from any one of the sub-array light sources and simultaneously scans the light beams in parallel and with equidistant spacing across the light receiving member [see 6, 9 in Fig. 1].

With regard to claim 4, Inoue et al. additionally disclose wherein the array light source further includes a common base for all of the sub-array light sources, each of the sub-array light sources including the same number of semi-conductor lasers formed integrally on the common

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base. Please see the common base associated with the semi-conductor laser diode array 21 and the associated sub-array light sources 21a depicted in Fig. 1.

With regard to claim 5, Inoue et al. additionally disclose wherein the semi-conductor lasers of each sub-array light source are arranged in a first direction, and the sub-array light sources are arranged in a second direction perpendicular to the first direction. Please see the two-dimensional (i.e., orthogonal) source geometry depicted in Fig. 1.

With regard to claim 9, Inoue et al. expressly disclose an image output device comprising a light-receiving member [namely 5]; and the multiple beam scanning device of claim 1. Please see above as well as column 1, lines 10-12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-8 & 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 5,870,132A) in view of Laberge (US 6,252,622 B1).

With regard to claims 2 & 10, Inoue et al. disclose (please refer to Fig. 4) the claimed inventions as respectively set forth above **EXCEPT FOR** a teaching wherein said inventions further comprise a detection unit that detects when a presently-used sub-array light source of the plurality of sub-array light sources is defective, the presently-used sub-array light source presently emitting the plurality of light beams to be scanned by the optical unit; and a switching unit that switches a sub-array light source to use from the presently-used sub-array light source

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to a different one of the plurality of sub-array light sources when the detection unit detects that the presently-used sub-array light source is defective.

Laberge, however, expressly teaches a selection sub-system (see column 2, lines 34-46) that controls a pair of laser diode arrays (see 1 & 3 in Fig. 1) that can operate both to detect when a presently-used sub-array light source of the plurality of sub-array light sources is defective [see column 2, lines 42-43] and to switch a sub-array light source to use from the presently-used sub-array light source to a different one of the plurality of sub-array light sources when the detection unit detects that the presently-used sub-array light source is defective [see, e.g., column 2, lines 34-37].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the respective inventions of **Inoue et al.** such that each further comprise both a detection unit and a switching unit--the detection unit detecting when a presently-used sub-array light source of the plurality of sub-array light sources is defective, the presently-used sub-array light source presently emitting the plurality of light beams to be scanned by the optical unit; and the switching unit switching a sub-array light source to use from the presently-used sub-array light source to a different one of the plurality of sub-array light sources when the detection unit detects that the presently-used sub-array light source is defective—as taught by **Laberge**, for at least the purpose of ensuring that said inventions remain operative in the event of the failure of a [presently-used] sub-array light source.

With regard to claims 3 & 11, the combination additionally discloses wherein said detection unit includes a light detection unit [see light detector 8 in Fig. 4 of **Laberge**, as well as column 5, lines 12-46] that detects light intensity of each light beam emitted from the presently-

used sub-array light source, the detection unit detecting that the presently-used sub-array light source is defective when the light detection unit detects that the light intensity of at least one of the plurality of light beams emitted from the presently-used sub-array light source is outside a predetermined range. *Id.*

With regard to claim 6, Inoue et al. disclose (please refer to Fig. 1) the invention as claimed—[a] multiple beam scanning device [53] for scanning a plurality of light beams across a light receiving member [5], the multiple beam scanning device comprising: an array light source [21] including a plurality of a sub-array light sources [21a], each sub-array light source emitting a plurality of light beams with independently modulated light intensity [implicit given the finite size of each of said sub-array light source; the independently modulated light intensity limitation implicitly being met due to the partial coherent nature of light emitted by semi-conductor laser diodes]**—EXCEPT FOR** an explicit teaching of a selection unit that selects one of the sub-array light sources; and a drive unit that drives the selected one of the sub-array light sources to emit the light beams, wherein the selection unit connects the selected sub-array light source to the drive unit.

Laberge, however, expressly teaches a selection unit (namely, the selection sub-system disclosed in column 2, lines 34-46 thereof) that selects one of said sub-array light sources; and a drive unit that drives the selected one of the sub-array light sources to emit the light beams, wherein the selection unit connects the selected sub-array light source to the drive unit. *Id.*

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the multiple beam scanning device taught by Inoue et al. such that it further comprise a selection unit that selects one of the sub-array light sources; and a

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drive unit that drives the selected one of the sub-array light sources to emit the light beams, wherein the selection unit connects the selected sub-array light source to the drive unit, as taught by **Laberge**, for at least the purpose of ensuring that said multiple beam scanning device remain operational in the event of the failure of one or more of said sub-array light sources.

With regard to claim 13, the combination expressly discloses an image output device comprising a light-receiving member [namely 5]; and the multiple beam scanning device of claim 6. Please see above as well as column 1, lines 10-12 of **Inoue et al.**

With regard to claim 14, the combination teaches wherein said multiple beam scanning device further includes a detection unit that detects when the selected sub-array light source is defective, and the selection unit selects a different one of the sub-array light sources when the detection unit detects that the currently selected sub-array light source is defective. Please see the rejection of claim 13 above in light of the rejection of like detection unit limitations set forth above with respect to claims 2 & 10.

With regard to claim 7, the combination additionally discloses wherein the multiple beam scanning device as claimed in claim 6 comprises a detection unit that detects when the selected sub-array light source is defective, wherein the selection unit selects a different one of the sub-array light sources when the detection unit detects that the currently selected sub-array light source is defective. Please see in particular column 2, lines 34-46.

With regard to claims 8 & 12, the combination additionally discloses wherein said array light source includes a common base for all of the sub-array light sources, each of the sub-array light sources including the same number of semi-conductor lasers formed integrally on the common base. Please see 21a in 21 in Fig. 1 of **Inoue et al.**


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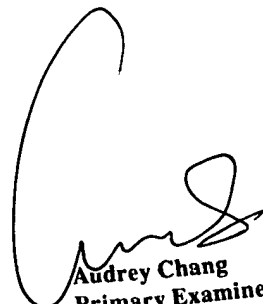
Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The examiner can normally be reached on Monday-Friday, 9:00 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn, can be reached at (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Craig H. Curtis
Group Art Unit 2872
16 March 2005


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